

STATE ADVISORY COUNCIL ON SCIENCE AND TECHNOLOGY

MINUTES

Tuesday, April 25, 2001

3:00 - 5:00 p.m.

State Office Building, Room 5112

Salt Lake City

MEMBERS & ASSOCIATE MEMBERS PRESENT:

SAUER, Dennis	Alliant Techsystems, Inc.
HOOPER, Gary	Brigham Young University
BREHM, Michael	Brehm Environmental LLC
DOENGES, Peter	Evans and Sutherland, Corp
EMBLEY, Phyllis	Jordan School District
ALLIS, Rick	UGS
KULKARNI, Rajiv	Centers of Excellence
KING, Bruce L.	Dept of Agriculture(for Earl R)
WADE, Joseph	Legislative Research
MOULDING, Brett	USOE
RASMUSSEN, H. Paul	USU (for Brent Miller)

OTHERS PRESENT:

GOCHNOUR, Natalie	GOPB
FINLAYSON, Val	Utah Partnership
WINTERS, Suzanne	State Science Advisor
WALTERS, Clara	GOPB
CLARK, Robert Beck	BYU
ANTHONY, Camille	CCJJ/Gov's Office

MEMBERS NOT PRESENT:

GESTELAND, Ray	University of Utah
MILLER, Brent	Utah State University
TAKACH, Troy	Parvus Corporation
LUND, Gary	Thiokol Corporation
JOHNSON, Susan	Futura Industries

I. Call to Order/Introductions/Approval of Minutes

Vice Chair, Gary Hooper called the meeting to order at 3:10 p.m. A motion was made to accept the minutes from the February 28, 2001 meeting, as written. Voting was unanimous and the minutes were approved.

II. Follow-up Item - Parowan Gap Resolution - adoption of language change

The draft Resolution in support of preservation of the Parowan Gap was strengthened by resolving to support completion of the research and further understanding of the site. There were no comments from the Council; Mike Brehm moved for adoption of the Resolution and Dennis Sauer moved to second. The Parowan Gap Resolution passed with a unanimous vote.

Action Item: Suzanne will send the Resolution to appropriate agencies with a cover letter requesting feedback, and in 6 months will ask for a report from some of the agencies and research groups involved with Parowan Gap.

III. Request for Council Assistance - Camille Anthony - C.C.J.J.

The Commission on Criminal and Juvenile Justice was created in 1983. It's purpose is to coordinate between branches and levels of government and promote broad philosophical agreement regarding criminal and juvenile justice. Reducing crime and victimization is an integral part of the agreement. These are local, state and federal organizations, along with legislative, executive, and judicial branches. Also included are victims of crime, perpetrators, sentencing juvenile vs. adult. The Commission has done a good job marshaling the players in the criminal and juvenile justice system and have come up with good policy recommendations, whether they be to the legislature, the Judicial Council or the Governor.

One of the biggest problems in criminal and juvenile justice is a lack of scientifically defensible data to show that certain programs work. C.C.J.J. professionals want to prove that a certain method of treating drug offenders (for example) is effective with a specific population. Camille believes the reason it has not worked, is that when a new law is passed, it creates a new crime or new drug such as: Meth or Ecstasy. When the legislature responds by making a sentence tougher or illegal, C.C.J.J. does not receive, as part of the fiscal note, a research and evaluation component of that, yet they must show that certain programs are effective or that spending funds on incarcerating "x" number of offenders is the best way to spend the money.

Camille has a Research Director and three Information Analysts who are very good at collecting data. What they cannot do is look at the data and do a long-term evaluation. They recently put together a state-wide "Crime Reduction Plan". However, they lack the resources to measure their accountability for all the strategies identified in the Plan. C.C.J.J., along with other departments pooled funds and entered into a contract with the University of Utah graduate school to produce limited "white paper" types of reviews.

CCJJ's most extensive review is currently being compiled by graduate students. It covers the "Serious Offender Law" (16 or older kids can be tried as an adult if they commit a person offense or if they have already maximized their time in the juvenile system) which has been a law for 5 years. CCJJ wants to look at the kinds of kids impacted and did it accomplish its intent. The second review is an evaluation funded by the National Institute of Justice to look at the Juvenile Sentencing Guidelines (\$20M proposal to promote fairness in the way kids are sentenced in the juvenile system). A huge disparity in rural, urban, black, white, and Hispanic kids was found. All of those issues were covered in the proposal funded by the legislature, but at the time, C.C.J.J. was expecting the study to be completed.

C.C.J.J. wants to conduct these types of research on a more regular basis and yet it is nearly impossible to find someone with juvenile and criminal justice training and a scientific statistical analysis interest. C.C.J.J. is restrained by the lack of legislative appropriation.

Camille would like the Council's input about an idea she is proposing. In order to create a science based staff in criminal justice, she proposed to the University of Utah that her commission teach classes at the university on "This Is Your Criminal and Juvenile Justice System". She will arrange for speakers, from a Chief of Police all the way through to the Board of Pardons and Parole. Students will get a first hand experience with people who work in the Criminal and Juvenile Justice system. In exchange, she would like some research capability. At the present time, the Graduate School of Social Work is helping, but are limited in what they can do. Camille has gone to several schools at the university and told them the Commission would like to teach this course and have the students receive credit for their degree (master and doctorate level). In turn, they would use the students and pay them as research assistants, to develop the kind of research from a "white paper" all the way to a doctoral thesis. The students could earn credit toward their degree and the Commission on Criminal and Juvenile Justice would use it as a "white paper" to present to the legislature. The beauty is, when someone graduates as a social worker, they work more with police, lawyers, administrators and legislators and Camille's proposal would give them a real world experience through taking the class.

Camille's proposal has been well received and has accepted acquired funding through a Criminal and Juvenile Justice Research Consortium.. The research should be presented in a method that is fully understandable to audiences who will be required to review and evaluate it (legislators, executive branch agencies and judiciary). CCJJ wants to develop their own research-methods curriculum so all students doing research for the Consortium would understand the curriculum and the products coming out would follow a uniform method.

Camille wanted to know if the Council is aware of anyone who would be interested in helping to develop the curriculum? At this point they are a year out from offering the course. The Commission has created a sub-committee to be part of the curriculum development, but she does need others with a science-based background to help.

Paul Rasmussen, from Utah State University, suggested CCJJ consider putting the course on the web to help reduce costs for students and talk to USU Cooperative Extension Service. There is a degree program working at the prison with Extension.

Dennis suggested she contact the Math Departments at the universities, with an emphasis on statistics. He felt this would be something they would be genuinely interested in.

Gary asked Camille to send information and a list of needs to the Council and they in turn will see that it is dispersed to the different universities.

Action Item: Camille will update her proposal and send it to the members of the Council.

IV. Ongoing Education Reform Efforts - Val Finlayson - Utah Partnership

Val Finlayson spoke to the Council about economic vitality for the State. This is a goal of the Utah Partnership because the research universities within the state produce many spin-off companies that offer higher paying jobs. Another is providing a skilled workforce to higher paying jobs. The Partnership found three pathways to reach this goal:

- Public education, higher education and companies which train employees
- Partnerships between the K-12 schools and Utah Corporations, focus on student achievement and help influence the electronic vitality.

Teachers in Utah do not have a state-wide teacher in-service program. DCED is supporting the Board of Regents and Board of Education's "Educator Development Committee" which is currently addressing pre-service and in-service for a statewide program.

In 1988 the top Nobel Prize winners were asked what the top careers were going to be over the next two decades and the answer was: Information Technology and Bioscience Technology. In 1992, that was confirmed again and a third career was added: Environmental Technology.

Granite School District intends to tear down the old part of Granite High School and add a new building on the side named "Granite Academy," a place where students can finish their high school work along with focusing on skills in the Information Technology and Bioscience Technology areas. Weber School District is also looking into the concept of an Academy for their schools.

Suzanne said this proposal by Granite may fall under the "Simulation Learning" program Pete Doenges presented to the Council.

Looking across the nation, students with information technology backgrounds are the most sought after and the trend will likely expand, due to the continuing advances in technology. Colleges are also putting their classes on the Internet while broadening the availability of schooling to those in remote areas.

The curriculum under the "Academy Concept" will be a broadening of scope of what is currently in place, along with providing skills the students need to advance in college preparation and their chosen career. Right now, Jordan School District is partnering with Intel to teach Jordan School students information technology. Employees have volunteered to partner with the teacher to help teach the students.

There is a movement to propose establishing an alternative teaching certificate or license to the legislature. This allows for scientists and others to convert from private industry to teaching without attending three years of college. Candidates would attend school summers and evenings for one year, in addition to their regular employment and then would be licensed.

Utah has not suffered from a teacher shortage until now. However 50% of teachers in the state teaching science are not certified to teach science.

The Council, Utah Partners and other groups must work closely together to help Utah build a good foundation for technology students and teachers encouraging them to stay within the state. In ten years, Utah could be faced with a shortage of technology based students for private industry and higher education.

Val closed with an explanation to the Council of an “Influence Diagram” created to illustrate where Utah Partnership has the ability to influence Utah’s economic vitality.

Action Item: Val Finlayson will share the “Influence Diagram” with the Council.

V. Teaching Methods - Robert Clark - BYU Physics

Professor Robert Clark came to BYU a short time ago from Texas. Professor Clark conducted general research in the sciences, but then quickly branched off into “How Can We Teach Better?” He has influenced about 10,000 teachers in Texas and now has started a new program in this state.

Professor Clark has a double degree in physics and has spent 32 years in Texas. He has been involved with the State Science Teachers Conference in Texas and was instrumental in increasing attendance from 40 to over 6,000 yearly. Professor Clark has also been heavily involved with in-service programs for the National Science Foundation.

Professor Clark was the director of a national program in physics, which became the proto-type for chemistry, astronomy and earth sciences. The program, “Physics Teaching Resource Agents Program” (PETRA), funded by the National Science Foundation, provides in-service to teachers. Since February 2000, there have been nine workshops in Utah. These are held on Saturdays for 6 hours and 50% who attend are 8th grade teachers and the other 50% are 12th grade teachers.

A preliminary proposal to the NSF to develop a similar program to that of Texas (PEP), the “Intermountain Enhancement Program” (IPEP) targets under-prepared physics teachers. Twenty-four teachers from Utah, Idaho and Wyoming will be invited to attend the first round of the program. The next round will ideally be localized to Utah. In Dr. Clarke’s opinion, if the state wants to have more qualified math and science

teachers, it should:

- Install differential salaries. This is a supply and demand issue. If the need is in physics, rather than biology, the higher salary should be in the physics area.
- Graduates are out of phase with supply and demand. Students decide what career they will go into based on the need at the time of entering college, rather than what will be needed in 4 years. They should pick a field that has an oversupply and by the time they get their degree the demand will be there.
- Alternative certification. In 1984, this program came into effect in Texas. If someone applies to be a teacher, they are screened by superintendents or principals for suitability and take a "Haberman Test." Next, teacher candidates go through a system of pre-assignments. In other words, classes held one night a week (no need to leave work) teach all adolescent physiology and the liabilities of teaching children. At the same time, the candidate must have a contract with a district. All this would take place during a summer and the candidate would be ready to teach in the fall. During the school year, three people monitor the teacher. At the end of the year monitoring information is compiled and a decision is made as to whether that person should be a teacher. If he/she is accepted, then a teaching certificate is issued. This program is widely accepted in Texas by public and higher education.
- Tuition forgiveness. Graduate credit should be awarded for professional development performed in the classroom.

If alternative teaching certificates can be put into operation, the State may find that many people, not just here in Utah, but those residing in other western states will want to move back.

VI. SVA Education Task Group - Suzanne Winters

Suzanne will be working with David Pershing of the University of Utah on this group. A subcommittee will be formed from the members of the Science Advisory Council. Any Science Council members wishing to participate should contact Suzanne.

VII. Other Business

Governor's Medal Awards - Because of the generous contributions from industrial sponsors as well as the three universities, there is ample money to pay for the Governor's Medal Award luncheon. In addition, there is enough left over to make a small monetary award (\$1,000) to the recipient in the Education category this year. There was some discussion about how to use the money in the future, possibly for scholarships for students who excel in the sciences.

Reminder - the Governor's Medal Award luncheon will be held on May 8 at the Governor's Mansion. There have been five nominees chosen to receive the 2001 Governor's Medal Award.

The next meeting will be June 27, 2001 at 2:00 p.m., in room 5112 of the State Office Building.

VIII. Adjourn

The meeting was adjourned at 5:00 p.m.